Rocky Mountain
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INSTRUCTION

INVESTIGATIVE DERIVED MATERIAL DISPOSAL PROJECT

RMRS/OPS-INSTR.023
Revision 2
Date Effective: 11/11/98

APPROVED: _____
Name, Title

1.0 PURPOSE

This work instruction (WI) provides ordered operations that must be performed during the processing of IDM waste drums for off-site disposal.

2.0 SCOPE

This WI applies to all activities associated with the IDM Waste Disposal Project. The areas covered are the Building 904 Pad Tents, D903 Decontamination Pad, Trench 1 and the Contractor Yard Area 905, and marked off road areas.

11-11-98 CB

NOTE:

This WI is organized into sections applicable to the overall job (i.e. prerequisites, personnel training, safety notes, etc.). The job will be conducted most efficiently using an assembly line approach. The actual instructions are presented in modular format broken down into sets of tasks. Example modules are: drum movement and sorting, decanting, loading the landfill roll off container, and bulking radioactive IDM. Depending upon weather conditions, the Job Supervisor may conduct activities under one or more of the modules on any given day. It is the express purpose of the WI to specifically provide this degree of flexibility to the Job Supervisor.

This document reflects the recommendation of various scientific and engineering personnel along with experienced craft workers to initiate the job. However, responsibility for adapting the work strategy to address changing field conditions and achieving success lies with the Job Supervisor.

3.0 DEFINITIONS AND ACRONYMS

- Type A IDM Waste includes soil, soil pore water, drill cutting debris, drums and drum liners characterized as non-hazardous, non-radioactive and destined for landfill disposal and unrestricted release.

- Type B IDM Waste includes soil, soil pore water, drill cutting debris, drums and drum liners characterized as non-hazardous and destined for disposal at Nevada Test Site. The radiological isotopic levels for Type B IDM waste are above the Environmental Background Radioactivity Levels for subsurface soils as listed in Appendix 1, Table 1 of 3-PRO-140-RSP-09.03, "Unrestricted Release of Bulk or Volume Material."

4.0 PREREQUISITES

4.1 PERSONNEL

4.1.1 JOB SUPERVISOR

- Conduct pre-evolution briefings as outlined in COOP 11 for all personnel as follows:
  - ◊ For operators and field support personnel at the beginning of each shift, or when a relief work crew is to take over and continue the job.
  - ◊ For those participants arriving late or after work is in progress.
  - ◊ When a new equipment configuration is to be used or there has been a significant change in the job strategy.
  - ◊ For a restart of operations after a shutdown or pause.
  - ◊ The pre-evolution briefing may include refresher review of this WI and other project work control documents such as Operations Order, OO-SWO-004, " Handling Drums and Pallets in Poor Condition and Response to Spills of Investigative Derived Material (IDM)."

- Conduct safety meetings during the pre-evolutionary briefings and encourage operator feedback on safety issues. Denote on the comment section of the pre-evolutionary briefing forms all safety concerns. Following the pre-evolutionary briefing, forward these safety concern comments to the Project Manager.

- Obtain written authorization from the Project Manager to initiate operations at the beginning of the project and after a shutdown.

4.1.2 TRAINING COORDINATOR

- Verify all personnel assigned to participate in project activities covered by this WI maintain their qualifications. The assigned Supervisor and Process Specialists involved in processing IDM B must maintain qualification in the areas of Hazardous Waste Operator, and Radiation Worker II. Waste generators must maintain their Waste Generator qualification. Forklift operators must maintain their Industrial Fork Truck qualification. The assigned Supervisor and Waste Technicians involved in shipping IDM A must maintain their qualification as Sanitary Waste Disposal Operators.

- Provide a List of Qualified Individuals (LOQI) per RMRS INST.004.

4.1.3 ALL PERSONNEL (participating in activities covered by this WI)

- Complete all training required by the Training Coordinator.

- Complete a briefing on this WI before commencing.

NOTE: IF DOCUMENTS PRESCRIBE CONFLICTING PPE REQUIREMENTS, THE MOST RESTRICTIVE PPE SHALL BE USED.

- All personnel assigned to the project shall wear the following PPE when working:

  ◊ Current Dosimeter [when required by Radiation Work Permit (RWP) or Radiological Postings].
  ◊ Personnel protective equipment (PPE) required by the RWP associated with the task.
  ◊ PPE required by the Activity Hazard Analysis (AHA) associated with the task.
  ◊ PPE required by the Job Supervisor.

4.2 APPROVALS & DOCUMENTATION

4.2.1 PROJECT MANAGER

- Verify the WI, AHA, and RWP approvals are completed and granted BEFORE initiating operations.

- Maintain daily log sheets per 1-31000-COOP, "Operating Area Logs and Records" for tracking IDM drums. Distribute copies to the WEMS Coordinator and Project Manager.

4.2.2 JOB SUPERVISOR

- Copies of the following documents shall be available at the job site and available upon demand for inspection if necessary:

◊ AHA's
◊ LOQI
◊ RWP's
◊ Integrated Safety Management Plan
◊ Waste Generating Instruction (WGI)
◊ Database listing drum number and Type A or B
◊ Log sheet for indexing IDM drum numbers and destination waste box for project files Work Instruction RMRS-OPS-INSTR.023, "Investigative Derived Material Disposal Project."

5.3 FACILITY & EQUIPMENT

5.3.1 JOB SUPERVISOR

- Confirm radios or other acceptable communications equipment are present.

- Confirm sufficient quantities of the following equipment are present at the work site and document in the operating record per COOP-006:

◊ Forklifts.
◊ Drum pressure relief / aspiration equipment
◊ Drum crusher
◊ Landfill roll off (container(s)/tarps/bows/ties
◊ Decanting equipment, pumps, tubes, liquid accumulation drums/tanks/tankers
◊ PPE
◊ Boxes for bulking IDM
◊ Safety supplies required by AHA's
◊ Drum grabbers, hydraulic or mechanical
◊ Absorbent material
◊ Sawsall
◊ Metal band cutters/snips

- Verify scheduled activities are entered on all applicable Plan of the Days (POD's), including those covering the Building 904 Pad Tents, D903 Decontamination Pad, Trench 1 and the Contractor Yard Area 905.

4-11-98 eB

- Verify that drum tippers and the drum crusher are inspected daily prior to use:
◊ Hydraulic hose fittings show no signs of leakage
◊ Tipper batteries have a fresh charge
◊ Tipper control pendant wiring insulation is not frayed
◊ Tipper drum clamp hinges are free from cracks
◊ Crusher motor fuel level near full
◊ Crusher motor oil level within normal band on dip stick
◊ Crusher ram is lubricated
◊ Crusher safety limit switch moves freely without sticking
◊ Crusher door hinge welds are free from cracks
◊ Accumulation debris below crusher support rails is cleaned out

6.0 INSTRUCTIONS

Each subsection represents a module or set of related tasks that may be performed independently from other modules. Unless otherwise stated, tasks may be performed in a different order or concurrently. Instructions apply to both Type A and Type B IDM waste unless specifically stated.

6.1 Drum Movements Module

6.1.1 For Type A containers destined for USA Waste, verify the containers being staged for decanting or loading are listed on PRE Number: 980313-T130B-002.

6.1.2 Type B containers destined for NTS disposal, verify the containers being staged for decanting are listed in the population defined in SAP-LLW-1373-001.

6.1.3 Within the project scope, IDM waste and other generated waste containers may be moved and temporarily staged in any of the following areas:

- Building 904 Pad and Tents
- Contractor Yard Area 905
- Decontamination Pad D903
- Trench 1
- Shipping location
- Roadways connecting above listed areas (no staging in roadways unless road has been secured)

11-11-98

NOTE: TRAFFIC CONTROLS MUST BE INSTITUTED TO AVOID COMMINGLING OF MOTOR VEHICLES AND FORKLIFTS CARRYING WASTE CONTAINERS

6.1.4 The Job Supervisor shall review general travel routes at the start of each work shift or when a new crew is assigned.

6.1.5 All personnel shall comply with Operations Order, OO-SWO-004, " Handling Drums and Pallets in Poor Condition and Response to Spills of Investigative Derived Material (IDM)."

6.1.6 All personnel shall make an ongoing effort to keep travel pathways clear and free of debris and unused pallets. Damaged or excess pallets shall be stacked no more than six feet high and banded, time permitting, in areas outside forklift travel routes.

6.1.7 If poor ground conditions make forklift travel dangerous, means such as plywood or steel sheets may be used to improve traction and safety.

6.1.8 A spotter is required at all times when picking-up or placing a load if required by the work crew at the pre-evolutionary briefing.

6.1.9 Before crossing a vehicular traffic roadway, stop, and check both directions for traffic before proceeding, ensure a spotter is present, and traffic signs are posted.

6.1.10 Periodically check positioning of drum grabbers on drums and forklift tines on boxes while traveling distances over uneven ground.

6.2 Decanting Free Liquids from Individual Type A Drums at the D903 Decon Pad Module

NOTE: At any time, Environmental Restoration may require access to and use of the entire D903 Decontamination Pad Facility. Follow instructions of the Job Supervisor and the D903 Decon Pad Supervisor for temporary removal of IDM decanting operations.

8-14-98 CB

6.2.1 Vent the drum in the Contractor Yard prior to loosening the bolts on the drum ring in one of the following manners:

- For bulging drums, position the drum under a lid pressure control/restraining device while removing the lid.
- For non-bulging drums, punch a hole in the lid or,
- For non-bulging drums, use other means, as approved by the Job Supervisor and the Health and Safety Supervisor.

8-14-98 CB

6.2.2 Remove the lid from the drum.

6.2.3 If no free liquids are visible, transport the drum with the lid placed loosely (not bolted) to the roll off container.

6.2.4 If drum contains free liquids, replace the lid and position drum(s) to be decanted on the Westside of the D903 Decon Pad.

6.2.5 Position the pump and associated hoses near the drum(s).

6.2.6 Make sure the discharge hose is secured to the grating leading to the D903 Decon Pad sump. ALL decanted water must be pumped directly into the sump. No decanted water is allowed to run over or spill onto the concrete.

NOTE: Contact the Job Supervisor and the D903 Decon Pad Supervisor if decant water contacts the concrete making up the pad or the ground surrounding the pad.

6.2.7 If free liquids are visible, use the suction hose from the pump to remove as much accessible water as possible. Minimize uptake of solids.

6.2.8 For 55 gallon Type A drums, to remove liquid accumulated between the drum and the liner, a punch and hammer will be used to puncture the side of the drum near the bottom to allow liquids to drain into the sump.

5-14-98 CB

6.2.9 For Type A drums place the lid on the drum without the ring. Place the drum with lid removed into the roll off container.

6.2.10 At the end of each shift, consult the Job Supervisor and the D903 Decon Pad Supervisor for direction on stowing the decanting equipment in a location to minimize impacts to other anticipated D903 Decon Pad Operations.

6.3 Decanting/ and or Pouring Free Liquids from Individual Type B Drums in Tents Module

6.3.1 Position drum(s) to be decanted on the 904 Pad.

6.3.2 Aspirate or vent the drum prior to loosening the bolts on the drum ring in one of the following manners:

- For bulging drums, position the drum under a lid pressure control/restraining device while removing the lid.
- For non-bulging drums, punch a hole in the lid or,
- For non-bulging drums, use other means, as approved by the Job Supervisor and the Health and Safety Supervisor.

6.3.3 Remove the lid from the drum.

6.3.4 If no free liquids are visible, skip to step 6.3.6.

6.3.5 If free liquids are visible, remove the water by pouring the water into a decant water accumulation container to be emptied at the 903 Decon Pad. Minimize uptake of solids as much as possible.

NOTE: A PERSON SHALL BE STATIONED AT THE DECANT WATER ACCUMULATION CONTAINER AT ALL TIMES DURING FILLING TO PREVENT OVERFLOW FROM THE ACCUMULATION CONTAINER..

6.3.6 Once decanting and or pouring is complete (if applicable), proceed with dumping Type B in crate.

6.3.7 When the decant water accumulation container needs to be emptied, replace its lid securely to avoid leakage.

NOTE: The decant water accumulation crate should be emptied when it is approximately ½ full. Pumping off the crate at the 903 Decontamination pad shall be coordinated with the D903 Building Manager.

6.3.8 Take the filled decant water accumulation container to the D903 Decon Pad and use a pump to empty the contents into the sump. ALL decanted water must be pumped directly into the sump. No decanted water is allowed to run over or spill onto the concrete at the D903 Decon Pad.

NOTE: Contact the Job Supervisor and the D903 Decon Pad Supervisor if decant water contacts the concrete making up the pad or the ground surrounding the pad.

6.3.9 Use cleaning equipment at the D903 Decon Pad to remove soil residues from the filled decant water accumulation drum. Make sure liquids and soil enter only the sump and do not contact the concrete pad.

6.3.10 Use as many decant water accumulation containers on a rotation to maintain IDM drum processing.

6.4 Module for Loading Type A Waste into a Roll Off Container Module in accordance with WGI Number GI98OUOPS0521A and the Landfill Contract Technical Representative (CTR) Instructions.

NOTE: Only subject Type A IDM waste drum to this module after it has undergone processing by Subsection/Module 6.2 or 6.3.

6.4.1 The lid of the drum should be left on (not bolted) while transporting/loading drums of Type A IDM waste.

6.4.2 Use a forklift or other means to move the Type A IDM drums into the roll off container.

6.4.3 Arrange the Type A IDM drums, pallets, and metal bands in a planar array or as instructed by the CTR (or appointed responsible person) for the landfill site.

NOTE: The landfill roll off container content weight limitation is 21,000 pounds. The overall gross weight may not exceed 54,000 pounds. Exceeding the weight limit is not an issue based on the weights of the individual drums.

6.4.4 The Type A IDM drums are considered Non-Routine/Special landfill waste and require the following paperwork:

- Material Transfer and Disposal form (for entire IDM Type A population)
- Waste Acceptance Criteria form contained in 1-PRO-573-SWODP, "Sanitary Waste Offsite Disposal Procedures" (for entire IDM Type A population)
- Radiological Waste Release Evaluation (for entire IDM Type A population)
- Non-hazardous waste manifest for each roll off container

Note: Each drum must be certified/authorized for disposal by the Waste Disposal Organization by physically verifying each drum and signing the manifest.

6.4.5 Attach a copy of the Type A drum inventory to each manifest for each roll off container. Retain list of drums in each roll off container in the project files.

6.4.6 Daily, secure the gate on the roll off container.

6.4.7 Tarp the roll off container according to instructions as prescribed by the Contract Technical Representative for the landfill site.

6.4.8 Remove the tarp prior to shipment.

6.4.9 Schedule all landfill shipments through Contract Technical Representative or the Supervisor.

6.5 Dumping Type B Waste into Boxes Without Segregation of IDM (refer to 3.0 Definition) and No Drum Crushing Module

NOTE: Only subject Type B IDM waste drums to this module after processing by Subsection/Module 6.2 or 6.3.

6.5.1 Transport the IDM Type B drum with secured lid to the 904 Pad south end or Trench 1 for indoor processing.

11-11-98

11-11-98 CB

6.5.2 Have an approved inspected metal or wooden box (crate) staged per the WGI. Remove the "Radioactive Contamination Inside" label if present.

6.5.3 Record the receiving box (crate) number and number of the drum to be consolidated on the Traveler in addition to Waste Inspection verification of crate.

6.5.4 Place absorbent in the box with the waste alternately layered or physically mixed with the IDM.

Note: As a guideline, use Table 1 to determine the amount of absorbent to be added to IDM drums:

Table 1

Condition of IDM	Results After Decanting	Bags of Abzorbit Per Drum
Saturated	Free Liquid Present	30 gal. - 5 bags 55 gal. - 10 bags
Moist	Possible Free Liquid Present	30 gal. - 2 bags 55 gal. - 5 bags
Dry	No Free Liquid Present Upon Inspection (Decanting Not Required)	1 bag per drum

11-11-98 CB

6.5.5 For the half-size crates or full crates, open the drum and use a forklift with hydraulic grabber or a drum tipper to empty the contents into the box. If contents has already been placed onto the ground surface use a shovel or other means to containerize the material. If necessary for waste compacting, sawsall cut the rigid drum liners. Drums may also fit into the crate without size reduction.

NOTE: The box weight limitation is 4,550 pounds. To ensure weight limitations are not exceeded, the final container shall be weighed prior to sealing container.

6.5.7 Prior to sealing, boxes will undergo a "tilt process" overnight. Waste Inspection will observe daily no free liquids are present in the boxes. If free liquids are observed, the container will be identified with a Non-Conformance Report (NCR) as required by the Non-Conformance Report procedure (2-U76-WC-4030, "Control of Waste Nonconformances"). The process and container will be re-evaluated to identify the problem. To correct the specific condition, the container will be emptied and the material reprocessed (decanting, addition of absorbent, etc.) prior to repackaging. Determination will be made by Waste Certification if IDM waste meets criteria required for shipment to NTS.

NOTE: The box weight limitation is 4,550 pounds and will be monitored as 55-gallon and 30-gallon drums are bulked into each box. The box being filled will be positioned on a scale during operations.

6.5.7 Prior to sealing, boxes will undergo a "tilt process" overnight. Waste Inspection will observe daily no free liquids are present in the boxes. Determination will be made by Waste Certification if IDM waste meets criteria required for shipment to NTS.

6-10-98 CB

6.5.8 Seal the waste crate according to WGI Number GI98OUOPS0519A (for half crates), WGI Number GI98OUOPS0519D (for full crates), or WGI Number GI98OUOPS0526A (for V-crates) and the on-site waste procedure, 4-D99-WO-1100, "Solid Radioactive Waste Packaging."

6.6 Dumping Type B Waste into Boxes With Segregation of IDM (refer to 3.0 Definition) and Drum Crushing Module

NOTE: Only subject Type B IDM waste drum to this module after it has undergone processing by Subsection/Module 6.2 or 6.3.

6.6.1 Transport the IDM Type B drum with secured lid to the 904 Pad south end for indoor processing.

6.6.2 Have an approved metal or wooden box (crate) staged on a scale with packaging materials per the WGI staged. Remove the "Radioactive Contamination Inside" label if present.

6.6.3 Record the receiving box (crate) number and number of the drum to be consolidated on the Traveler in addition to Waste Inspection verification of crate.

6.6.4 Place absorbent as needed in the box with the waste alternately or physically mixed with the IDM.

Note: As a guideline, follow Table 1 (refer to 6.5.4) guidance for adding absorbent.

6-10-98 CB

6.6.5 For a half-size or full size box, open the drum and use a forklift with hydraulic grabber or a drum tipper to empty the contents into the box. If necessary for waste compacting, sawsall cut the rigid drum liners. The IDM dirt and drum liner will be bulked into the box.

NOTE: The box weight limitation is 4,550 pounds and will be monitored as 55-gallon and 30-gallon drums are bulked into each box. The box being filled will be positioned on a scale during operations.

8-14-98 CB

6.6.7 Prior to sealing, boxes will undergo a "tilt process" overnight. Waste Inspection will observe daily no free liquids are present in the boxes. If free liquids are observed, the container will be identified with a Non-Conformance Report (NCR) as required by the Non-Conformance Report procedure (2-U76-WC-4030, "Control of Waste Nonconformances"). The process and container will be re-evaluated to identify the problem. To correct the specific condition, the container will be emptied and the material reprocessed (decanting, addition of absorbent, etc.) prior to repackaging. Determination will be made by Waste Certification if IDM waste meets criteria required for shipment to NTS.

6.6.8 Seal the waste crate according to WGI Number GI98OUOPS0519A (for half crates), WGI Number GI98OUOPS0519D (for full crates), or WGI Number GI98OUOPS0526A (for V-crates) and the on-site waste procedure, 4-D99-WO-1100, "Solid Radioactive Waste Packaging."

6.6.9 Stage boxes with IDM bulk waste on the 904 Pad until a truck load is accumulated and/or until an off-site transport truck is available.

8-14-98 CB

6.7 Loading Type B Waste Boxes onto Trucks Module

6.7.1 Transport the boxes with IDM bulk waste to the shipping location.

6.7.2 Load the boxes into a truck for off-site transport. Only DOT trained personnel may load trucks for off-site transfers.

6.7.3 If a truck is not available for off site transport, stage the boxes of IDM bulk waste on the 904 Pad until a truck is available.

7.0 RECORDS

All records generated while employing this WI will be retained as required by the referenced procedures or instructions; however, no records are generated as a result of this instruction.

8.0 REFERENCES

- 1-PRO-573-SWODP, Sanitary Waste Off-Site Disposal Procedure.
- 00-SWO-004, Handling Drums and Pallets in Poor Condition and Response to Spills of Investigative Derived Material.
- 3-PRO-140-RSP-09.03, Unrestricted Release of Bulk or Volume.
- 4-D99-WO-1100, Solid Radioactive Waste Packaging.
- 1-PRO-Q11-1221, Controls for Updating Waste Package Information in WEMS.
- WGI Number GI98OUOPS0519A, Disposing Type B IDM in Half Crates.
- WGI Number GI98OUOPS0521A, Disposing Type A IDM in Roll Off Containers.
- WGI Number GI98OUOPS0526A, Disposing Type B IDM in V-Crates.
- WGI Number GI98OUOPS0519D, Disposing Type B IDM in Half or Full Crates.

6-10-98 CB